भारतीय मानक
Indian Standard

IS 726 : 2022

सामान्य प्रयोग के लिए जस्तीकृत इस्पात की बाल्टियाँ — विशिष्टि

(तीसरा पुनरीक्षण)

Galvanized Steel Buckets for General Use — Specification

(Third Revision)

ICS 97.040.99

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December 2022 **Price Group 6**

Utensils, Cutlery Domestic Hardware Sectional Committee, MED 33

FOREWORD

This Indian Standard (Third Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Utensils, Cutlery Domestic Hardware Sectional Committee had been approved by the Mechanical Engineering Division Council.

This standard was first published in 1956 and subsequently revised in 1964 and 1982. In this revision, the following major changes have been incorporated:

a) Material grades have been revised;
b) New material, SS has been prescribed for the trunk;
c) Test for handle has been modified;
d) Performance test for hasp has been added; and
e) Marking clause has been modified.

First revision of this standard was done to exclude the buckets for firefighting from this standard (which were separately covered in IS 2546 : 1974 'Specification for galvanized mild steel fire bucket).

The standard has been widely used as a result of which certain changes became necessary. The present revision incorporates the modifications relating to the specification of material, thickness of galvanized coating, thickness of steel sheet and the manufacturing details, which shall be helpful in the effective implementation of this standard.

The relevant SI units and corresponding conversion factors are given below for guidance:

$$1\ \text{kgf/cm}^2 = 98.066\,5\ \text{kPa (kilopascal)} = 10\ \text{m of Water column (WC)}$$
$$= 0.098\,066\,5\ \text{MPa (megapascal)}$$
$$= 0.980\,665\ \text{bar}$$
$$1\ \text{Pa} = 1\ \text{N/m}^2$$

The composition of the committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of the test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*third revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

GALVANIZED STEEL BUCKETS FOR GENERAL USE — SPECIFICATION

(Third Revision)

1 SCOPE

This standard lays down the requirements for material, dimensions, manufacture, finish and performance of galvanized steel buckets for general use.

2 REFERENCE

The Indian Standard listed in below contain provisions which, through reference in this text, constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

IS No.		*Title*
IS 280 2006	:	Mild steel wire for general engineering purposes (*fourth revision*)
IS 2062 : 2011		Hot rolled medium and high tensile structural steel — Specification (*seventh revision*)
IS 2629 1985	:	Recommended practice for hot-dip galvanizing of iron and steel (*first revision*)
IS 2633 1986	:	Method for testing uniformity of coating on zinc coated articles. (*second revision*)
IS 7226 1974	:	Specification for cold - Rolled medium, high carbon and low alloy steel strip for general engineering purposes.
IS 7887 1992	:	Mild steel wire rod for general engineering purposes — Specification (*first revision*)

3 SIZES

The size of a bucket shall be denoted by its diameter at the top in millimeters. Nominal sizes are 175, 200, 225, 250, 275, 300, 325 and 350 mm.

4 MATERIAL

4.1 Steel Sheets

Steel sheets used for the body, bottom and bottom ring shall be either cold-rolled (annealed) quality conforming to IS 7226 or hot rolled quality conforming to IS 2062.

4.1.1 The thickness of the steel sheet used for body, bottom ear, bottom ring and the diameter of the mild steel rod for the handle before galvanizing, shall conform to the following.

Part of the Bucket	*Thickness*, in mm
Body	0.63
Bottom	1.00
Bottom ring	1.60
Handle diameter	10.00,*Min*
Ear	2.50 mm for size up to 250 mm and 3.15 for size 275 mm and above for buckets.

4.2 Steel Rods

Steel rods used in the' manufacture of handle shall conform to IS 2062 or IS 7887.

4.3 Mild Steel Wire

Mild steel wire used for stiffening the top rim shall conform to IS 280.

5 SHAPE AND DIMENSION

5.1 The typical shape and leading dimensions of the buckets are given in Fig.1 to 4 and Table 1.

Any other size and shape of bucket can be made as per agreement to between the purchaser and the manufacturer.

Table 1 Typical Dimension and Nominal Capacity of Galvanized Steel Bucket for General Use

(*Clause* 5.1)

(All dimensions in mm)

Sl No.	**Nominal Size**	**Body**			**Ear**		**Nominal Capacity**, in litre
		Dia at Top *A*	Depth *B*	Dia at bottom *C*	Height *D*	Width *E*	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
i)	175	175 ± 5	150 ± 5	125 ± 5	55 ± 3	35 ± 3	2.7
ii)	200	200 ± 5	175 ± 5	135 ± 5	55 ± 3	35 ± 3	4.0
iii)	225	225 ± 5	200 ± 5	150 ± 5	55 ± 3	35 ± 3	5.5
iv)	250	250 ± 5	225 ± 5	170 ± 5	55 ± 3	35 ± 3	8.0
v)	275	275 ± 5	250 ± 5	190 ± 5	63 ± 3	40 ± 3	11.0
vi)	300	300 ± 5	275 ± 5	210 ± 5	63 ± 3	40 ± 3	14.0
vii)	325	325 ± 5	300 ± 5	230 ± 5	63 ± 3	40 ± 3	18.0
viii)	350	350 ± 5	325 ± 5	250 ± 5	63 ± 3	40 ± 3	23.0

6 MANUFACTURE

6.1 The body shall be in two halve which shall be joined together either by butt welding, or seam welding, or by riveting or by a lock joint as shown in Fig. 2A. The width of the seam lock shall be not less than; 12 mm for all sizes of buckets except for 200 mm and 225 mm sizes for which the width of the seam shall be not: less than 8 mm. The bottom shall be dished and shall be joined to the body either by lap welding or by a lock joint as shown in Fig. 3. The top rim of the body shall be uniformly beaded with wire (*see* Fig. 1). The ears shall be fitted to the top of the rim at the longitudinal joint of the body by means of at least three tinmen flat head rivets with the flat head on the inside. The ears shall be drilled or punched to receive the handle. The ends of the handle shall be bent up as shown in Fig. 1. The ends of the bottom ring shall be either welded or riveted together with at least two rivets and with a lap of at least 25 mm. The bottom ring shall be joined to the body by welding (*see* Fig. 3) which shall be done only at two diametrically opposite seams. The bottom end of the bottom ring shall be straight and not folded.

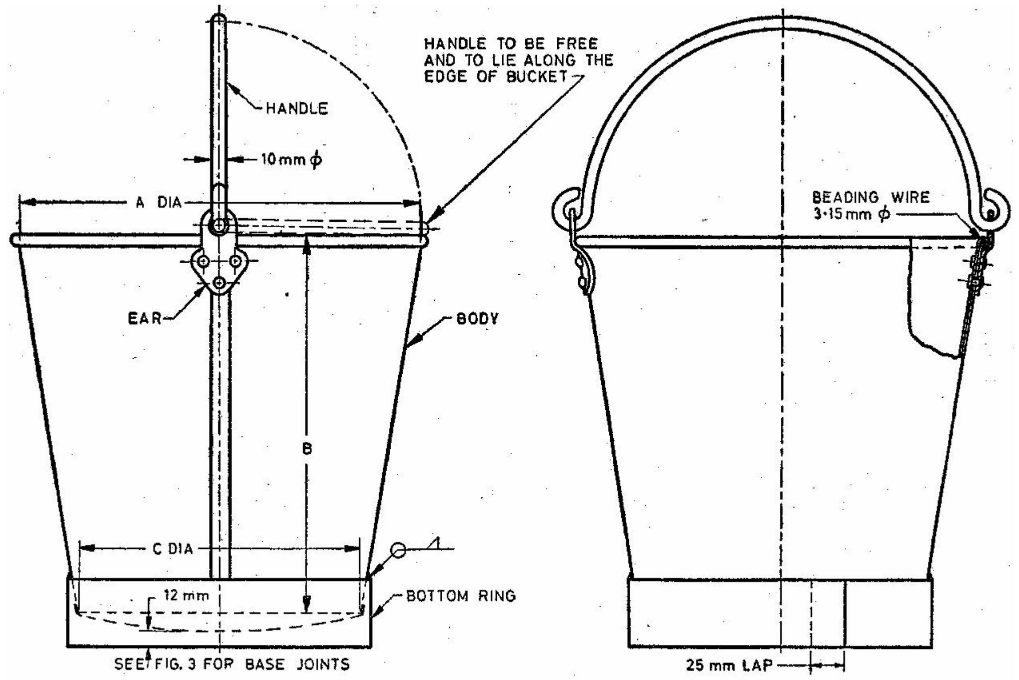
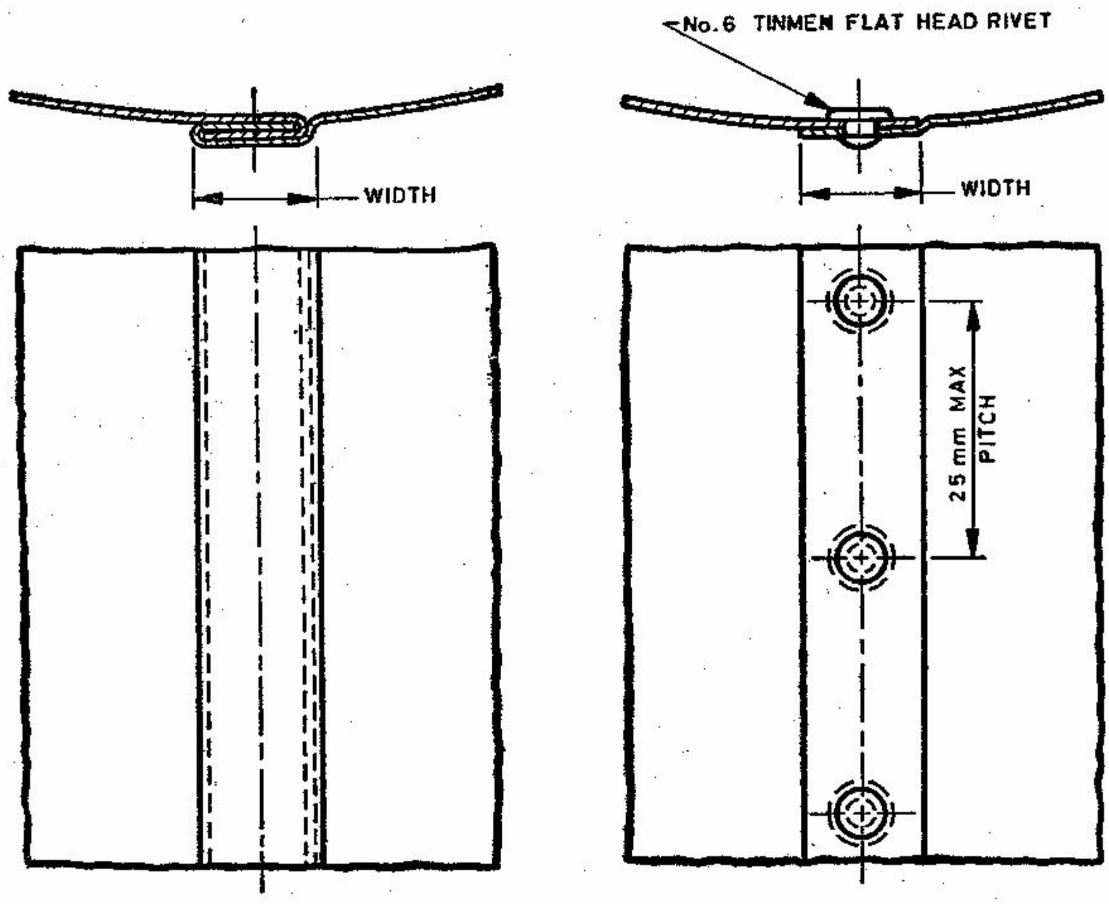

HANDLE TO BE FREE AND TO LIE ALONG THE EDGE OF BUCKET
HANDLE
10 mm ϕ
A DIA
EAR
BODY
B
C DIA
12 mm
BOTTOM RING
SEE FIG. 3 FOR BASE JOINTS
BEADING WIRE 3·15 mm ϕ
25 mm LAP

FIG.1 STEEL BUCKET

6.2 All welds shall be free from porosity, blow holes and brittleness. The locking shall cover at least 70 percent of the width of the lock joint and the seam shall be close-rolled and finished smooth. The parts of the joint shall be well-pressed and shall be free from gaps. The beading shall be fully formed without gap.



2A Lock Joint

2B Riveted Joint

FIG. 2 JOINTS FOR THE BODY

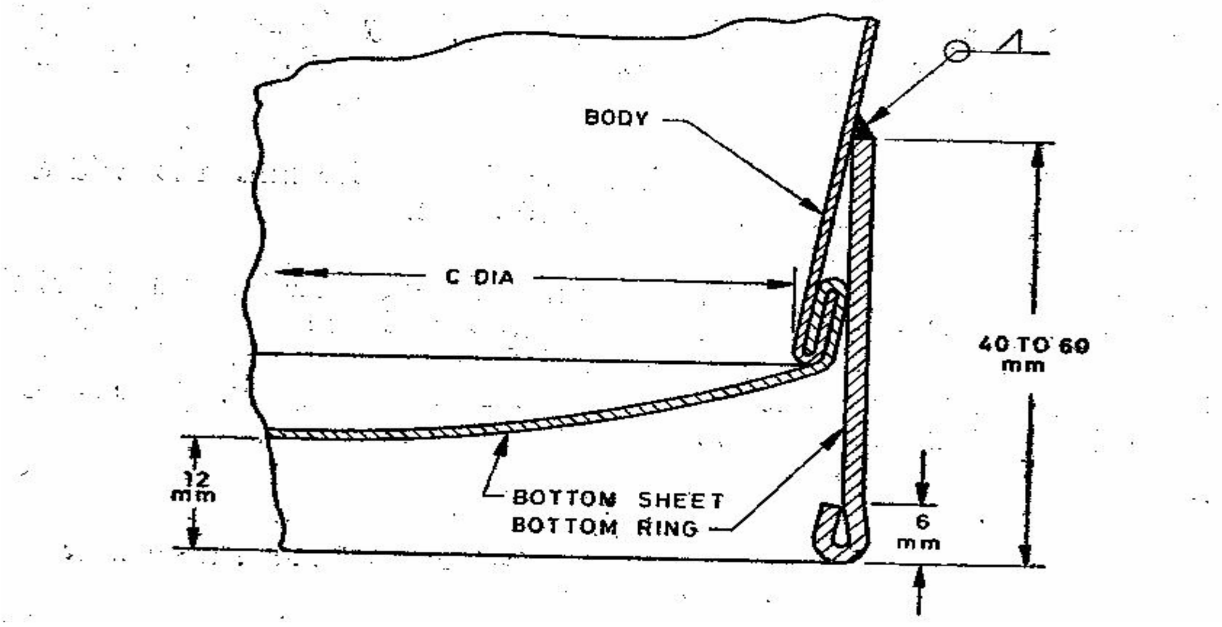


FIG. 3 DETAILS SHOWING OF JOINING BOTTOM TO BODY AND BOTTOM RING TO BODY

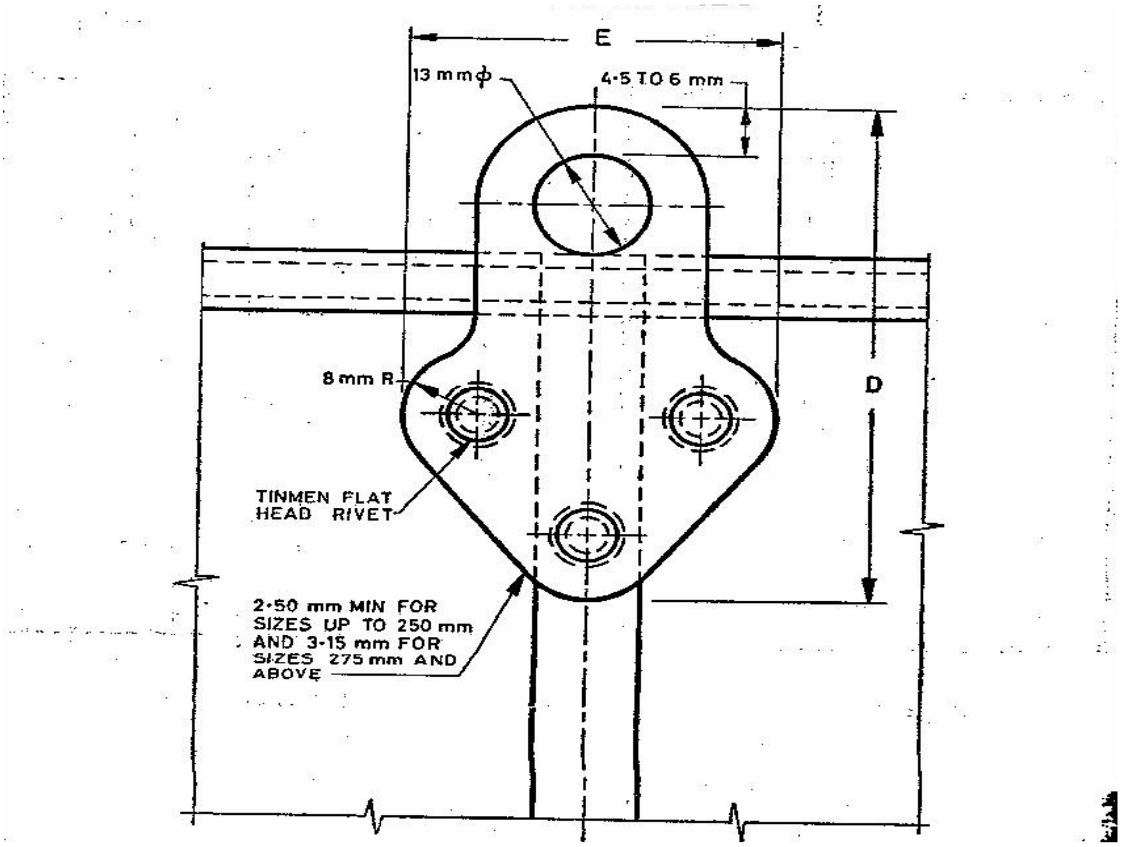

E
13 mmϕ
4·5 TO 6 mm
8 mm R
D
TINMEN FLAT HEAD RIVET
2·50 mm MIN FOR SIZES UP TO 250 mm AND 3·15 mm FOR SIZES 275 mm AND ABOVE

FIG. 4 DETAILS OF EAR

7 FINISH

7.1 All parts of the bucket shall be finished smooth and sharp edges rounded off.

7.2 The buckets after fabrication shall be hot-dip galvanized. The coating of zinc on any portion shall be not less than 0.03 g/kg (single surface). The galvanized coating shall be free from blisters, grittiness, stains and bare spots, in accordance with Annex A of IS 2629.

7.2.1 The galvanizing shall withstand four immersions of one-minute duration when tested in accordance with IS 2633.

7.3 The mating of the bottom ring with body and bottom shall be such that recess are avoided as far as possible.

8 PERFORMANCE TEST

8.1 Buckets shall be leak-proof. The recommended methods for testing the buckets for leakage are given in **8.1.1** and **8.1.2**.

8.1.1 The bucket shall be filled with water to the brim and kept for 15 minutes. The bucket shall not show any sign of leakage during this period.

8.1.2 A water tank of suitable size and full of water shall be used for conducting the test. The dry empty bucket with its top facing upwards shall be pressed down the water vertically taking care that the top is at least 6 mm above the water level. It shall be observed whether any water gets into the bucket from the bottom or sides of the bucket. If any water enters the bucket, it shall be considered to have failed in the test. The bucket shall be withdrawn, reversed (with top downwards) and again pressed down the water vertically without agitating the water. Should any air bubble be seen escaping through the water, the bucket shall be deemed to leak and, therefore, shall be considered to have failed in the test.

8.2 Drop Impact Test

Fill water in the bucket to its full capacity at the normal temperature and drop it on a hard wood board of 30 mm or more in thickness fixed horizontally from the height of 400 mm in a vertical state and checked for any change in the appearance.

8.3 Stability Test

8.3.1 When the bucket filled with water to the full capacity is placed upright on a flat surface, the bucket shall be stable, shall not rock when an external finger pressure is applied on the top, side surface.

8.3.2 When the bucket filled with water to the full capacity is placed upright over a rough 10^{o} inclined plane, it shall not overturn or fall.

8.4 Capacity Test

The bucket shall be filled with water up to the brim. The volume of the water shall be measured with the help of a measuring jar. This shall give the nominal water capacity of the bucket. No negative tolerance shall be allowed.

9 SCALE OF SAMPLING AND CRITERION FOR CONFORMITY

9.1 Lot

In any consignment, all the buckets of same quality, same size and from the same batch of manufacture shall be grouped together to constitute a lot.

9.2 Sample Size

The number of buckets to be selected from a lot shall depend on the size of the lot and shall be in accordance with column 2 and 3 of Table 2. These buckets shall be selected at random from at least 10 percent of the packages subject to a minimum of three, equal number of buckets being selected from each such package. If the number of packages is less than three, all the packages shall be selected.

9.2.1 *For Shape and Dimension, Manufacturing Defects, Finish and Leakage*

All the buckets selected as in **9.2** shall be inspected for shape and dimensions (*see* **5**), manufacturing defects (*see* **6**), finish (*see* **7**) and for performance tests (*see* **8**). Any bucket which fails to satisfy the requirements of any one or more of the characteristics shall be considered as defective bucket. The lot shall be considered as conforming to these requirements, if the number of defective buckets does not exceed the permissible number of defective buckets given in column **4** of Table 2.

9.2.2 *For Galvanization Test*

From the lot conforming under **9.2.1**, a sub-sample in accordance with column 5 of Table 2 shall be drawn and tested for galvanization. The lot shall be considered as conforming to the galvanizing requirements, if no bucket fails in this test.

Table 2 Scale Sampling and Criteria for Conformity

(*Clause* 9.2)

Sl. No. (1)	**No. of Bucket sin the Lot** (2)	**Sample Size** (3)	**Permissible no. of Defective Buckets** (4)	**Sub - Sample Size** (5)
i)	Up to 25	5	0	1
ii)	26 to 50	8	0	1
iii)	51 to 150	13	1	2
iv)	151 to 300	20	1	2
v)	301 to 500	32	2	3
vi)	501 to 1 000	50	3	3
vii)	1001 to 3 000	80	5	3
viii)	3 001 and above	125	7	5

10 MARKING

10.1 Each bucket shall be suitably marked at the bottom or side with the manufacturer's name, registered trade-mark or identification mark, batch number, body material grade, declared coating thickness and the nominal capacity (as specified in the table). Embossing shall be sufficiently deep so that the marking remains quite legible after galvanizing.

NOTE— these details could be provided by means of stamping or engraving

10.1.1 The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standard Act*, 2016 and the Rules and Regulation framed there under, and the product(s) may be marked with the Standard Mark.

11 PACKING

11.1 Each bucket shall be suitable packaged to avoid any damage during transit. The packaging shall be eco-friendly

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Utensils, Cutlery Domestic Hardware Sectional Committee, MED 33

Organization	*Representative(s)*
In Personal Capacity (*A-504, K.G Chandra Vista, OMR, Opposite to Satyabhama University, Sholinganallur, Chennai*)	SHRI G. SHANMUGANATHAN (***Chairperson***)
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Organization	*Representative(s)*
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Scientist 'D'/Director
(MED), BIS

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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